

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **Akira NAKASUGA et al.**

Serial No.: **Divisional of 08/861,005**

Group Art Unit: **1771 (prior)**

Filed: **January 31, 2002**

Examiner: **D. Zirker (prior)**

For: **SHEET-FORM, CURABLE PRESSURE-SENSITIVE ADHESIVE**

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

January 31, 2002

Sir:

Prior to calculation of the filing fee and examination of this application, please amend the above-identified application as follows:

**CLEAN VERSION OF AMENDMENTS**

**IN THE CLAIMS**

Please cancel claims 1-11 and 13 without prejudice or disclaimer, amend claim 12, and add new claims 14-22 as follows:

12. (Amended) A method for joining members comprising the steps of:

placing the sheet-form, curable pressure-sensitive adhesive on one of said members, said curable pressure sensitive adhesive comprising a composition including:

- (A) a high molecular weight polymer having a pressure-sensitive adhesive property and having a molecular weight of several tens of thousands to 5 million;
- (B) a compound containing an epoxy group; and
- (C) a polymerization initiator which, when an activation energy is applied thereto,

initiates the compound (B) to undergo a ring-opening polymerization; and

irradiating the sheet-form, curable pressure sensitive adhesive with an ultraviolet light having an intensity greater than  $1 \text{ mW/cm}^2$  in a wavelength range exceeding 300 nm, either before or after said one member is adhered to another member via the sheet-form, curable pressure-sensitive adhesive.

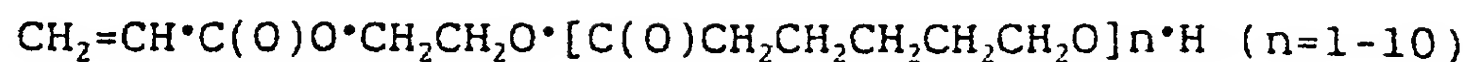
14. (New) The method according to claim 12, wherein said high molecular weight polymer (A) is an acrylic polymer.

15. (New) The method according to claim 12, wherein said composition comprises 100 parts by weight of an acrylic polymer (A), 1 - 1000 parts by weight of the compound (B) and 0.01 - 1000 parts by weight of the polymerization initiator (C).

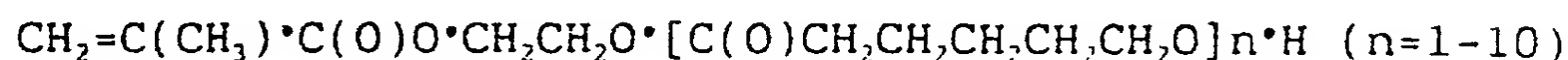
16. (New) The method according to claim 12, wherein the acrylic polymer (A) is a copolymer obtainable by copolymerizing a compound (a) containing at least one (meth)acryloyl group and at least one hydroxyl group per molecule with a copolymerizable monomer (b) which is copolymerizable with the compound (a).

17. (New) The method according to claim 16, wherein said compound (a) is at least one selected from the group consisting of the following compounds (1) through (10):

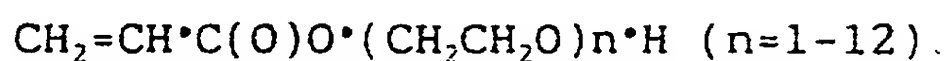
【Compound 1】



【Compound 2】



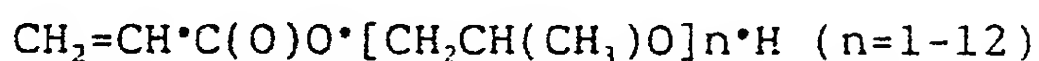
【Compound 3】



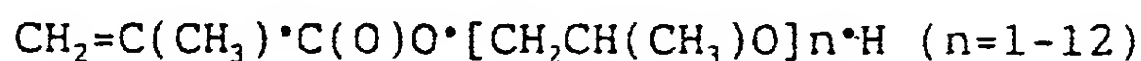
【Compound 4】



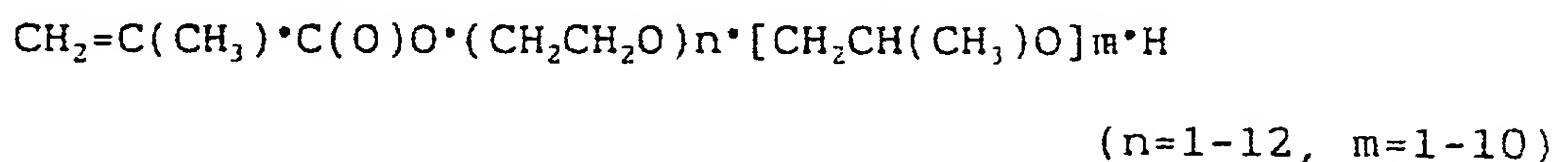
【Compound 5】



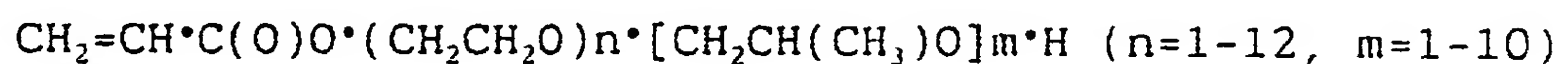
【Compound 6】



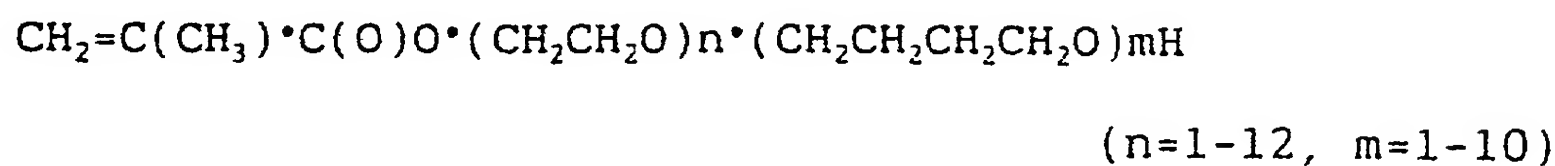
【Compound 7】



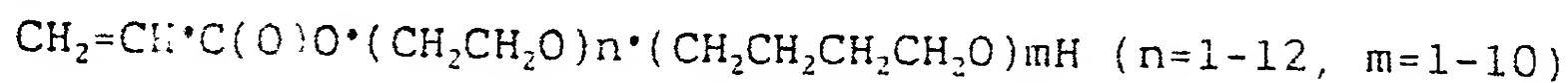
【Compound 8】



【Compound 9】



【Compound 10】



18. (New) The method according to claim 16, wherein said copolymerizable monomer (b) is selected from the group consisting of methyl (meth)acrylate, ethyl (meth)acrylate, cyclohexyl (meth)acrylate, benzyl (meth)acrylate and (meth)acrylic acid ester of alcohols containing a C-O-C ether bond.

19. (New) The method according to claim 12, wherein said polymerization initiator (C) is a cationic photopolymerization initiator.

20. (New) The method according to claim 19, wherein said cationic photopolymerization initiator is an onium salt compound.

21. (New) The method according to claim 12, wherein said composition further comprises a vinyl ether compound.

22. (New) The sheet-form, curable pressure-sensitive adhesive in accordance with claim 21, said composition includes 1 - 30 parts by weight of the vinyl ether compound relative to 30 - 70 parts by weight of the compound (B).

**REMARKS**

Claims 12 and 14-22 are pending in this application. Claims 1-11 and 13 have been canceled, claim 12 has been amended and new claims 14-22 have been added.

Claim 12 has been amended to be independent and to incorporate the limitations of base claim 1. An additional limitation regarding the "polymer having a molecular weight of several tens of thousands to 5 million" has also been added to claim 12. This additional limitation finds support in the specification when the teachings on page 25, line 12, and on page 7, lines 5-6 are combined.

New claims 14-22 are supported by the recitation of originally multiply dependent claim 12.

The above amendment to the claim has been made to correct the dependency of the claim and to put the application in better condition for examination.

A marked-up version showing the changes made by the present amendment is attached hereto as "Version with Markings to Show Changes Made."

PRELIMINARY AMENDMENT  
Akira NAKASUGA et al.

Divisional of U.S. Patent Application 08/861,005  
Attorney Docket No. 970535A

In the event that any fees are due in connection with this paper, please charge our Deposit  
Account No. 01-2340.

Respectfully submitted,

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Enclosures: Version with Markings to Show Changes Made  
H:\FLOATERS\DAG\97\970535a\draft preliminary amendment to client

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS**

Please amend claim 12 as follows:

12. (Amended) A method for joining members comprising the steps of:

placing the sheet-form, curable pressure-sensitive adhesive ~~in accordance with any one of~~  
~~preceding claims 1-10~~ on one of said members, said curable pressure sensitive adhesive comprising  
a composition including:

(A) a high molecular weight polymer having a pressure-sensitive adhesive property  
and having a molecular weight of several tens of thousands to 5 million;

(B) a compound containing an epoxy group; and

(C) a polymerization initiator which, when an activation energy is applied thereto,  
initiates the compound (B) to under go a ring-opening polymerization; and

irradiating the sheet-form, curable pressure sensitive adhesive with an ultraviolet light having  
an intensity greater than 1 mW/cm<sup>2</sup> in a wavelength range exceeding 300 nm, either before or after  
said one member is adhered to another member via the sheet-form, curable pressure-sensitive  
adhesive.